

Patent Application Number: 10/077,910

REMARKS

Claims 21-41 are pending in the present application. Claims 1-20 have been cancelled without prejudice or disclaimer to the subject matter set forth therein.

A. Double-Patenting Rejection

Claims 21-41 have been rejected under the judicially created doctrine of obviousness-type double-patenting over the claims 1-10 of US Patent Number 6,795,730 in view of claims 1-24 of US Patent Number 6,795,736. This rejection is respectfully traversed.

As respectfully submitted above, independent claim 21 recites that a cardiac assist system comprises a primary device housing having a first control circuit, therein, to perform synchronous cardiac assist operations; a first shielding formed around the primary device housing to shield the primary device housing and any circuits therein from electromagnetic interference; a first biocompatible material formed around the first shielding; a secondary device housing having a second control circuit, therein, to perform asynchronous cardiac assist operations; a second shielding formed around the secondary device housing to shield the secondary device housing and any circuits therein from electromagnetic interference; a second biocompatible material formed around the second shielding; and a detection circuit, communicatively coupled to the first and second control circuits, to detect an electromagnetic interference insult upon the cardiac assist system. The first control circuit terminates synchronous cardiac assist operations and the second control circuit initiates asynchronous cardiac assist operations upon detection of the electromagnetic interference insult by the detection system.

Moreover, as respectfully submitted above, independent claim 26 recites that a cardiac assist system for implanting in a body of a patient, the cardiac assist system comprises a main module; a first shielding formed around said main module to shield the main module and any circuits therein from magnetic-resonance imaging interference; a first biocompatible material formed around the first shielding; a magnetic-resonance imaging-immune auxiliary module; a second shielding formed around the magnetic-resonance imaging-immune auxiliary module to shield the magnetic-resonance imaging-immune auxiliary module and any circuits therein from magnetic-resonance imaging interference; a second biocompatible material formed around the second shielding; a communication channel between the main module and the magnetic-

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resonance imaging-immune auxiliary module for the magnetic-resonance imaging-immune auxiliary module to detect failure of the main module; and a controller for activating the magnetic-resonance imaging-immune auxiliary module upon detection of failure of the main module.

Lastly, as respectfully submitted above, independent claim 31 recites that a cardiac assist system for implanting in the body of a patient, the cardiac assist system comprises a main module; a first biocompatible material formed around the main module; an magnetic-resonance imaging-hardened auxiliary module; a shielding formed around the magnetic-resonance imaging-hardened auxiliary module to shield the magnetic-resonance imaging-hardened auxiliary module and any circuits therein from magnetic-resonance imaging interference; a second biocompatible material formed around the shielding; and a communication channel between the main module and the magnetic-resonance imaging-hardened auxiliary module. The magnetic-resonance imaging-hardened auxiliary module detects, through the communication channel, failure of the main module. The magnetic-resonance imaging-hardened auxiliary module includes a controller for activating the magnetic-resonance imaging-hardened auxiliary module upon detection of failure of the main module.

In formulating the rejection, the Examiner alleges that US Patent Number 6,795,730 recites, in the issued claims, primary and secondary modules wherein the secondary module is activated if electromagnetic interference is sensed. The Examiner alleges that US Patent Number 6,795,736 recites, in the issued claims, shielding and a biocompatible material around the shielding. In conclusion, the Examiner argues that the claims of the present application would be considered to be obvious to the ordinarily skilled artisan in view of the combined subject matter recited in the issued claims of US Patent Number 6,795,730 and US Patent Number 6,795,736. This position by the Examiner is respectfully traversed.

Although the Examiner may be correct in noting that US Patent Number 6,795,730 recites, in the issued claims, primary and secondary modules wherein the secondary module is activated if electromagnetic interference is sensed and that US Patent Number 6,795,736 recites, in the issued claims, shielding and a biocompatible material around the shielding, the Examiner has failed to formulate a prima facie case of obviousness because the Examiner has failed to consider all the differences between the claims of the above-identified application and the issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736.

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The claims of the above-identified application set forth more than primary and secondary modules, shielding, and biocompatible material

With respect to independent claim 21 of the above-identified application, this claim recites a detection circuit, communicatively coupled to the first and second control circuits, to detect an electromagnetic interference insult upon the cardiac assist system. In contrast, the issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736 set forth a sensing lead that is coupled to a primary module. The issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736 fail to teach a detection circuit that is communicative coupling to both modules. Thus, the issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736, singly or in combination, fail to teach or even suggest a detection circuit, communicatively coupled to the first and second control circuits, to detect an electromagnetic interference insult upon the cardiac assist system.

With respect to independent claim 26 of the above-identified application, this claim recites a communication channel between the main module and the magnetic-resonance imaging-immune auxiliary module for the magnetic-resonance imaging-immune auxiliary module to detect failure of the main module and a controller for activating the magnetic-resonance imaging-immune auxiliary module upon detection of failure of the main module. In contrast, the issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736 set forth a communication lead between the primary module and secondary module that conveys to one module when an electrical circuit in the other module is opened. The issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736 fail to teach detecting a failure of the main module and a controller for activating the magnetic-resonance imaging-immune auxiliary module upon detection of failure of the main module. Thus, the issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736, singly or in combination, fail to teach or even suggest a communication channel between the main module and the magnetic-resonance imaging-immune auxiliary module for the magnetic-resonance imaging-immune auxiliary module to detect failure of the main module and a controller for activating the magnetic-resonance imaging-immune auxiliary module upon detection of failure of the main module.

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With respect to independent claim 31 of the above-identified application, this claim recites that a magnetic-resonance imaging-hardened auxiliary module detects, through a communication channel, failure of a main module and includes a controller for activating the magnetic-resonance imaging-hardened auxiliary module upon detection of failure of the main module. In contrast, the issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736 set forth a communication lead between the primary module and secondary module that conveys to one module when an electrical circuit in the other module is opened. The issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736 fail to teach detecting a failure of the main module and a controller for activating the magnetic-resonance imaging-immune auxiliary module upon detection of failure of the main module. Thus, the issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736, singly or in combination, fail to teach or even suggest a magnetic-resonance imaging-hardened auxiliary module detects, through a communication channel, failure of a main module and includes a controller for activating the magnetic-resonance imaging-hardened auxiliary module upon detection of failure of the main module.

In summary, the issued claims of US Patent Number 6,795,730 and the issued claims of US Patent Number 6,795,736, singly or in combination, fail to teach or even suggest:

- 1) a detection circuit, communicatively coupled to the first and second control circuits, to detect an electromagnetic interference insult upon the cardiac assist system;
- 2) a communication channel between the main module and the magnetic-resonance imaging-immune auxiliary module for the magnetic-resonance imaging-immune auxiliary module to detect failure of the main module and a controller for activating the magnetic-resonance imaging-immune auxiliary module upon detection of failure of the main module; and/or

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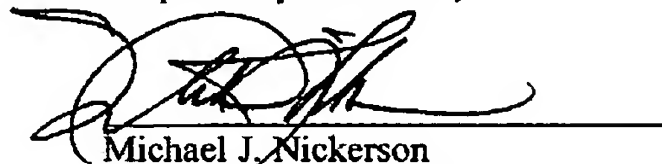
- 3) a magnetic-resonance imaging-hardened auxiliary module detects, through a communication channel, failure of a main module and includes a controller for activating the magnetic-resonance imaging-hardened auxiliary module upon detection of failure of the main module.

Accordingly, in view of the remarks submitted above, the Examiner is respectfully requested to reconsider and withdraw this rejection.

CONCLUSION

Accordingly, in view of all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw all the present rejections. Also, an early indication of allowability is earnestly solicited.

Respectfully submitted,



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